

What is claimed is:

1. In a communication network including a subnetwork coupled to a backbone network, said subnetwork including an  
5 access point (AP) and a plurality of clients associated with said AP, a method of exchanging network information, comprising steps of:

a) automatically monitoring network status of said AP on a continual basis over said communication network, said AP  
10 coupled to said backbone network;

b) automatically and dynamically generating network status information for said AP based upon step a); and

c) automatically sending said network status information for said AP to each of said plurality of clients  
15 when there is a change in said network status of said AP, said plurality of clients coupled wirelessly to said AP.

2. The method as described in Claim 1, wherein said change of network status in step c) includes a failed  
20 communications link between said AP and said backbone network.

3. The method as described in Claim 1, wherein said change of network status in step c) includes a change of IP address for an electronic device taken essentially from the  
25 group consisting essentially of: said AP, a mask associated with said subnetwork, and a gateway associated with said subnetwork.

4. The method as described in Claim 1, comprising the further step of:

- d) automatically sending said network status information for said AP to a first client of said plurality of clients when said first client is newly associating with said AP.

5. The method as described in Claim 4, wherein a smart agent implements said steps a), b), c) and d), said smart agent located in said AP.

6. The method as described in Claim 4, wherein said first client has previously associated with a second AP, said first client having an IP address associated with a second subnetwork, said second subnetwork including a second mask, a second gateway, and said second AP.

7. The method as described in Claim 4, wherein said first client, before associating with said AP, does not have any current association with any AP or any subnetwork, nor any IP address.

8. The method as described in Claim 4, wherein said access point, said plurality of stations, and said smart agent are substantially compliant with a version of the IEEE 802.11 communications protocol.

9. The method as described in Claim 4, wherein said steps c) and d) are implemented through a layer 2 communication protocol.

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10. The method as described in Claim 1, wherein said network status information is taken from a group consisting essentially of:

- AP Internet Protocol (IP) address;
- 10 AP IP address type;
- subnet mask information;
- subnet mask IP address;
- subnet gateway information;
- subnet gateway IP address; and
- 15 AP link status to said backbone network.

11. In a communication network including a subnetwork coupled to a backbone network, said subnetwork including an access point (AP) and a plurality of clients associated with 20 said AP, a method of exchanging network information, comprising steps of:

- a) automatically monitoring network status of said AP on a continual basis over said communication network, said AP coupled to said backbone network;
- 25 b) automatically and dynamically generating network status information for said AP based upon step a);

c) automatically sending said network status information for said AP to each of said plurality of clients when there is a change in said network status of said AP, said plurality of clients coupled wirelessly to said AP; and

5 d) automatically sending said network status information for said AP to a first client of said plurality of clients when said first client is newly associating with said AP.

10 12. The method as described in Claim 11, wherein a smart agent implements said steps a), b), c), and d), said smart agent located in said AP.

15 13. The method as described in Claim 12, wherein said access point, said plurality of stations, and a smart agent located in said AP that implements said steps a), b), c) and d) are substantially compliant with a version of the IEEE 802.11 communications protocol.

20 14. The method as described in Claim 11, wherein said change of network status in step c) includes a failed communications link between said AP and said backbone network.

25 15. The method as described in Claim 11, wherein said change of network status includes a change of IP address for an electronic device taken essentially from the group consisting

essentially of: said AP, a mask associated with said subnetwork, and a gateway associated with said subnetwork.

16. The method as described in Claim 11, wherein said  
5 first client has previously associated with a second AP, said first client having an IP address associated with a second subnetwork, said second subnetwork including a second mask, a second gateway, and said second AP.

10 17. The method as described in Claim 11, wherein said first client, before associating with said AP, does not have any current association with any AP or any subnetwork, nor any IP address.

15 18. The method as described in Claim 11, wherein said network status information is taken from a group consisting essentially of:

AP Internet Protocol (IP) address;  
AP IP address type;  
20 subnet mask information;  
subnet mask IP address;  
subnet gateway information;  
subnet gateway IP address; and  
AP link status to said backbone network.

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19. The method as described in Claim 11, wherein said steps c) and d) are implemented through a layer 2 communication protocol.

5        20. A computer system comprising a processor, a memory unit, and a display screen wherein said memory contains instructions that when executed implement a method of exchanging network information, comprising steps of:

- a) automatically monitoring network status of said AP
- 10 on a continual basis over said communication network, said AP coupled to said backbone network;
- b) automatically and dynamically generating network status information for said AP based upon step a); and
- c) automatically sending said network status
- 15 information for said AP to each of said plurality of clients when there is a change in said network status of said AP, said plurality of clients coupled wirelessly to said AP.

21. The computer system as described in Claim 20,  
20 wherein said change of network status in step c) includes a failed communications link between said AP and said backbone network.

22. The computer system as described in Claim 20,  
25 wherein said change of network status in step c) includes a change of IP address for an electronic device taken essentially from the group consisting essentially of: said AP, a mask

associated with said subnetwork, and a gateway associated with said subnetwork.

23. The computer system as described in Claim 20,  
5 comprising the further step of:

d) automatically sending said network status information for said AP to a first client of said plurality of clients when said first client is newly associating with said AP.

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24. The computer system as described in Claim 23, wherein a smart agent implements said steps a), b), c) and d), said smart agent located in said AP.

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25. The computer system as described in Claim 23, wherein said first client has previously associated with a second AP, said first client having an IP address associated with a second subnetwork, said second subnetwork including a second mask, a second gateway, and said second AP.

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26. The computer system as described in Claim 23, wherein said first client, before associating with said AP, does not have any current association with any AP or any subnetwork, nor any IP address.

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27. The computer system as described in Claim 23, wherein said access point, said plurality of stations, and said

smart agent are substantially compliant with a version of the IEEE 802.11 communications protocol.

28. The computer system as described in Claim 23,  
5 wherein said steps c) and d) are implemented through a layer 2 communication protocol.

29. The computer system as described in Claim 20,  
wherein said network status information is taken from a group  
10 consisting essentially of:

AP Internet Protocol (IP) address;  
AP IP address type;  
subnet mask information;  
subnet mask IP address;  
15 subnet gateway information;  
subnet gateway IP address; and  
AP link status to said backbone network.